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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/554,695	05/18/2000	KENICHI SHIRAISHI	0670-239	3568

7590 07/10/2003

NIXON PEABODY
8180 GREENSBORO DRIVE
SUITE 800
MCLEAN, VA 22102

EXAMINER
BAYARD, EMMANUEL

ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 07/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/554,695	SHIRAISHI, KENICHI	
	Examiner	Art Unit	
	Emmanuel Bayard	2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 2* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 2* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Objections

1. Claims 1 and 2 are objected to because of the following informalities: in line 9, respectively, replace "and" with ---an---. Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saka et al U.S. Patent No 6,023,491 in view of Eory U.S. Patent No 5,832,043.

As per claims 1 and 2, Sake et al discloses a receiver comprising: a demodulation means (see figs. 1-12, 16-24 element 1 and col.13, line 53 and col.32, lines 51-53) for demodulating a PSK modulated signal of digital signals modulated by a plurality of PSK modulation method having different numbers of phases and multiplexed in time, by using carriers (fc1 , fc2) reproduced by carrier recovery (see element 9 and col.32, line 61) corresponds to the claimed (carrier reproduction means), and outputting I and Q symbol stream data; reception signal phase rotation angle detection for detecting a phase rotation angle relative to a transmission side of the I

and Q symbol stream data output from said demodulation means (see elements 6 or 14 and col.14, lines 12-15 and col.30, lines 55-56); a complex multiplying (see element 11 and col.30, line 54) for phase rotation means for rotating a phase of I and Q symbol stream data output from said demodulation means by a phase rotation angle detected by said reception signal phase rotation angle detection means (see elements 6 or 14), wherein the carrier reproduction means (see element 9) of said reproduction means has ROM circuit (see fig.32 element 33) corresponds to the claimed (phase error tables) for respective modulation method, the tables storing (see col.46, lines 46-55) carrier phase error (see element 12 and col.2, lines 30-34) data for various demodulated I and Q symbol stream data pairs, and while said demodulation means (see element 1) demodulates a reception signal corresponding to each of the modulation methods, phase error data (see element 12 and col.2, lines 30-34) corresponding to the demodulated I and Q symbol stream data is read from the ROM circuit (see element 33) (phase error table) corresponding to the modulation method to correct the phase carriers, the receiver being characterized in that; while said demodulation means (see element 1) demodulates a reception signal corresponding to each of the modulation methods, the carrier reproduction means (see element 9) reads the phase error data corresponding to demodulated I and Q symbol stream output from said complex multiplier phase rotation (see element 11) means from the ROM storing (phase error table) (see fig.32 element 33) corresponding to the modulation method to correct the phase carriers.

However Saka et al complex multiplier does not teach an inverse phase rotation means for inversely rotate a phase.

Eory teaches a complex multiplier for inversely rotate a phase (see fig.1 element 55 and col.4, lines 44-57 and col.7, lines 1-5).

It wold have been obvious to one of ordinary skill in the art to implement the teaching of Eory into Sake as to provide positive and negative frequencies with continuous for accommodating bi-directional frequency conversion in near-zero IF digital receivers as taught by Eory (see col.7, lines 3, 13-15).

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Iwamatsu U.S. Patent No 6,034,564 teaches a demodulator.

Cai et al U.S. Patent No 5,960,040 teaches a communication signal processors.

Ishikawa et al U.S. Patent No 5,440,587 teaches a demodulator.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is (703) 308-9573. The examiner can normally be reached on Monday-Thursday from 8:00 AM - 5:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham, can be reached on (703) 305-4378. The fax phone number for this Group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3800.

Emmanuel Bayard

Primary Examiner

July 1, 2003